and fall off (get out of) the electrode or terminal from the point contact with the electrode or terminal. Further, there has been a problem in that a conventional probe apparatus cannot be applied in order to improve mechanical precision within a range in which the probe needle does not slide and fall off.

[0009]

In view of the above, the present inventors have considered that the improvement of the positioning of the electrode or terminal can be solved in accordance with the shape of the probe needle, without depending on the mechanical precision of the wafer prober or device prober. Further, as regards the defect that the tip end of the probe needle slides and jumps off (deviates from) the terminal surface, the inventors have considered that: the tip end gets out of the terminal surface due to the point contact; and this can also be solved in accordance with the shape of the probe needle.

[0010]

According to the present invention, there is provided a probe card which maintains the present level of mechanical precision of a checking apparatus for measuring a semiconductor device and which includes a probe needle difficult to slide and fall off from the electrode or terminal even in the case where the probe needle contacts with the electrode or terminal while being shifted from the center position of the electrode or terminal.

[0011]

[Means for solving the Problem]

case, the center (CL7, CL8) of the pitch between the probe needles
of 500 µ substantially conforms to the substantial center (L9, L10)
of the electrode 11. Thus, the line length of the probe needle 12
of 100 µ is located at and contacts with the substantial center
(CL7, CL8) of the side length of the terminal electrode of 200 µ.
However, as shown in Fig. 10, the probe needle contacts with the
substantial center of the side of the terminal electrode 11, but
at the time of the predetermined overdrive, that is, when the
mounting base 10 is raised by, for example, 50 µ, the probe needle
12 is horizontally shifted in the same direction (the perpendicular
direction to the rise direction of the mounting base) as the
direction of the semiconductor device 9 by a minute amount $\Delta\chi$, for
example, about 10µ. The total of the horizontal shift amount (about
10 µ) and the line width (about 5 µ) of the probe needle is 60 µ,
with respect to the side length of the electrode of 400 µ. Even
if there is a positional error of 170 µ (+-) in a calculative manner,
the measurement can be performed.

[0033]

Fig. 11 is a longitudinal sectional side view for explaining
the operation at the time when the center of the probe needle and
the center of the lead terminal electrode in Fig. 8 are shifted
from each other by 100 µ.

[0034]

In the figure, there is shown the following case where: a pitch

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